

WHAT IS CLAIMED IS:

1. An antibody or antigen binding portion thereof that specifically binds to IGF-1R wherein said antibody comprises a IGF-1R antibody selected
5 from the group consisting of PINT-6A1, PINT-7A2, PINT-7A4, PINT-7A5, PINT-7A6, PINT-8A1, PINT-9A2, PINT-11A1, PINT-11A2, PINT-11A3, PINT-11A4, PINT-11A5, PINT-11A7, PINT-11A12, PINT-12A1, PINT-12A2, PINT-12A3, PINT-12A4, and PINT-12A5 or fragment of any one thereof.
- 10 2. The antibody or antigen binding portion thereof of claim 1 wherein said IGF-1R antibody is selected from the group consisting of PINT-7A4, PINT-8A1, PINT-9A2, PINT-11A1, and PINT-11A4 or a fragment of any one thereof.
- 15 3. The antibody or antigen binding portion thereof of claim 1 wherein said IGF-1R antibody is selected from the group consisting of PINT-8A1, PINT-9A2, and PINT-11A4 or a fragment of any one thereof.
- 20 4. The antibody or antigen binding portion thereof of claim 1, 2 or 3 wherein said antibody comprises at least one light chain of said IGF-1R antibody and/or at least one heavy chain of said IGF-1R antibody.
- 25 5. The antibody or antigen binding portion thereof of claim 4 wherein said antibody comprises at least one CDR of said IGF-1R antibody.
6. The antibody or antigen binding portion thereof of claim 5, wherein said antibody comprises CDRs from different light chains of said IGF-1R antibody and/or CDRs from different heavy chains of said IGF-1R antibody.
- 30 7. The antibody or antigen binding portion thereof of claim 1, 2 or 3 wherein said antibody comprises at least one V_L or V_H variable region of said IGF-1R antibody.

8. The antibody or antigen-binding portion thereof according to claims 1, 2 or 3, wherein the antibody or portion thereof has at least one property selected from the group consisting of:

- a) cross-competes for binding to human IGF-1R;
- 5 b) binds to the same epitope of human IGF;
- c) binds to human IGF-1R with substantially the same K_d ; and
- d) binds to human IGF-1R with substantially the same off rate.

10 9. The antibody or antigen-binding portion thereof according to claims 4 wherein the antibody or portion thereof has at least one property selected from the group consisting of:

- a) cross-competes for binding to human IGF-1R;
- b) binds to the same epitope of human IGF;
- c) binds to human IGF-1R with substantially the same K_d ; and
- 15 d) binds to human IGF-1R with substantially the same off rate.

10. The antibody or antigen-binding portion thereof according to claims 5 wherein the antibody or portion thereof has at least one property selected from the group consisting of:

- 20 a) cross-competes for binding to human IGF-1R;
- b) binds to the same epitope of human IGF;
- c) binds to human IGF-1R with substantially the same K_d ; and
- d) binds to human IGF-1R with substantially the same off rate.

25 11. The antibody or antigen-binding portion thereof according to claim 6 wherein the antibody or portion thereof has at least one property selected from the group consisting of:

- a) cross-competes for binding to human IGF-1R;
- b) binds to the same epitope of human IGF;
- 30 c) binds to human IGF-1R with substantially the same K_d ; and
- d) binds to human IGF-1R with substantially the same off rate.

12. The antibody or antigen-binding portion thereof according to claim 7 wherein the antibody or portion thereof has at least one property selected from the group consisting of:

- 5 a) cross-competes for binding to human IGF-1R;
- b) binds to the same epitope of human IGF;
- c) binds to human IGF-1R with substantially the same K_d ; and
- d) binds to human IGF-1R with substantially the same off rate.

10 13. The antibody or antigen-binding portion thereof according to claim 1, 2 or 3 wherein said antibody is an immunoglobulin G (IgG), an IgM, an IgE, an IgA or an IgD molecule.

15 14. The antibody or antigen-binding portion thereof according to claim 1, 2 or 3 wherein said antibody is an Fab fragment, an F(ab')₂ fragment, an Fv fragment, or a single chain antibody.

20 15. The antibody or antigen-binding portion thereof according to claim 1, 2 or 3 wherein said antibody is a humanized antibody, a human antibody, a chimeric antibody or a bispecific antibody.

16. The antibody of claim 13 wherein said IGF-1R antibody is an IgG selected from the group consisting of PINT-7A4, PINT-8A1, PINT-9A2, PINT-11A1, and PINT-11A4.

25 17. A pharmaceutical composition comprising the antibody or portion thereof according to claims 1, 2 or 3 and a pharmaceutically acceptable carrier.

30 18. An isolated cell line that produces the antibody according to claims 1, 2 or 3

19. A method or treatment of a cancer or tumor comprising administering an effective amount of an IGF-1R specific antibody of claims 1, 2 or 3.

5 20. An isolated nucleic acid molecule that comprises a nucleic acid sequence that encodes a heavy chain or antigen-binding portion thereof or a light chain or antigen-binding portion thereof of an antibody according to claims 1, 2 or 3.